Claims

What is claimed is

1. A method of screening a sample in open space to detect the presence of threats within shoes worn by people and other objects placed on it, said threats including at least one of (i) explosives exhibiting QR properties; (ii) narcotics exhibiting QR properties; (iii) biological agents exhibiting QR properties; (iv) conductive shielding that may prevent detection of QR properties; and (v) metals that may indicate presence of arms

2. A method according to claim 1, wherein the screened sample consists of worn shoes and the screened person stands on or walks through the screening device

3. A method according to claim 1, wherein the location of the threat within the screened sample is determined.

4. A method according to claim 1 wherein environmental operational parameters are measured and utilized for at least one of calibration, correction, compensation and signal-to-noise ratio improvement, of the screening measurements; said environmental parameters including at least one of: noise level, noise characteristics, interference level, interference characteristics, environmental temperature, screened object temperature and environmental barometric pressure.

5. A method according to claim 1 wherein the screening is automatically initiated upon sensor-based identification of the presence of the object to be screened

6. A method according to claim 1 wherein the screening is manually initiated by an operator or by the person to be screened

7. An apparatus that screens a sample in opens space to detect the presence of threats within shoes worn by people and other objects placed on it, said threats including at least one of (i) explosives exhibiting QR properties; (ii) narcotics exhibiting QR properties; (iii) biological agents exhibiting QR properties;

(iv) conductive shielding that may prevent detection of QR properties; and (v) metals that may indicate presence of arms.

8. An apparatus according to claim 3 wherein said apparatus provides the location of the threat within the screened sample

9. An apparatus according to claim 7 wherein said apparatus is integrated into a people screening check gate that utilizes other sensors to detect the presence of threats carried by a person

10. An apparatus according to claim 3 wherein said apparatus is integrated into a closed compartment to prevent incoming interference and outgoing radiation.

11. An apparatus according to claim 7 wherein said apparatus comprises a single antenna located either below the surface the screened object is placed on or enclosing at least part of the screened object.

12. An apparatus according to claim 7 wherein said apparatus comprises an antenna array, located on a horizontally flat or curved plane below the surface the screened object is placed on

13. An apparatus according to claim 3 wherein said apparatus is primarily perpendicular to the surface the screened object is placed on so that no installation is required below this surface, and the electromagnetic excitation and detection coils being therefore located on one or both sides of the screened object rather than below it.

14. An apparatus according to claim 3 wherein the antennas are implemented on multiple planes.

15. An apparatus according to claim 7 including a barrier that only allows passage of people or objects whose screening did not detect the presence of threats.